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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,863	09/30/2003	Xiaodong R. Fu	SP03-127	7634

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CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER

BALDWIN, GORDON

ART UNIT	PAPER NUMBER
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1775

MAIL DATE	DELIVERY MODE
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05/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/676,863		FU ET AL.	
	Examiner		Art Unit	
	Gordon R. Baldwin		1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,8,9 and 31-36 is/are pending in the application.
- 4a) Of the above claim(s) 11-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8,9 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070220</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-4, 8, 9, 31-32 and 34-36 are rejected under 35 U.S.C. 102(a) as being anticipated by Cutler (Pat. Appl. No. 2004/0152593).

Consider claims 1-4, 8 and 31-32, 34-36, Cutler teaches a porous ceramic honeycomb structure that can be made of cordierite that can have a cell wall thickness of between 0.10 mm to 0.50 mm and a porosity greater than 45% to greater than 55% and a pore size greater than 5 micrometers up to 30 micrometers with a coefficient of thermal expansion (CTE) or less than $15 \times 10^{-7}/^{\circ}\text{C}$ to also being less than $7 \times 10^{-7}/^{\circ}\text{C}$. (Para. 10-12)

As for the modulus of rupture strength, this aspect is considered to taught by the Cutler reference because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cutler (Pat. Appl. No. 2004/0152593).

Consider claims 6 and 33, Cutler and the claims differ in that Cutler does not teach the exact same proportions concerning the median pore diameter size as recited in the instant claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Cutler overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

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Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Claims 1-4, 6, 8, 9, 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beall (Pat. No. 6,432,856) and further in view of Kondo (Pat. No. 6,159,893).

Consider claims 1-4, 6, 8, 31-36, Beall teaches a ceramic honeycomb article with a CTE of $5.0 \times 10^{-7} \text{ } ^\circ\text{C}^{-1}$ with pores sizes of $2\mu\text{m}$ and cell wall thicknesses of 2.72mils (Col. 6 lines 30-40). (Col. 3 lines 40-55) However, Beall only teaches a total porosity in a range between 20-30%. Kondo teaches a ceramic honeycomb structure with wall thickness less than .250mm or 9.84 mils with a porosity between 45-80% with a CTE of $6 \times 10^{-7} \text{ } ^\circ\text{C}^{-1}$ (Table 3). (Col. 4, lines 25-50) It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the honeycomb structure of Beall with the honeycomb structure of Kondo because the increased porosity of the partition walls in Kondo (Col. 3 lines 15-25) exhibit an improved water-absorbing ability so that when the partitioning walls are coated with a catalyst containing slurry, the amount of the coating can increase so that the catalyst concentration in the slurry can decrease.

As for the modulus of rupture strength, this aspect is considered to taught by the Cutler reference because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or

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obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Claims 1,2,4,6, 8-10 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeAngelis (Pat. No. 4,888,317).

Consider claims 1,2, 4, 6, 8-10 and 31-36, DeAngelis discloses a ceramic honeycomb structure with 5.9 mils wall thickness (Col. 6 lines 5-10) and porosities of up to 60%-80% (Col. 3 lines 65-70 and Col. 4 lines 1-20). DeAngelis also discloses the honeycomb comprising the same materials (Col. 4 lines 20-45), as that used in the present application (see embodiment [0017] on page 4 of the specification).

As for the median pore size, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the size of the pores in the range of 2-10 micrometers for the intended application, since it has been held that discovering an optimum value of a result effective variable only involves routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215

Additionally, while the pore size mentioned in the DeAngelis (1-20 microns, Col. 7 lines 5-20) involved the structural body being made out of metal, it is still considered to teach that a desirable median pore size is 1-20 microns.

DeAngelis also teaches a ceramic honeycomb structure (Col. 3 lines 60-70 and Col. 4 lines 1-20) and since it has the same structure as the claimed invention and is

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made by the same material as recited in the specification, the same honeycomb would also have the same physical properties, such as the CTE and the MOR as claimed.

Response to Arguments

Applicant's arguments filed 2/20/2007 have been fully considered but they are not persuasive.

Regarding the applicant's arguments of Kondo and the argued teaching against fine pores and high porosity. The stated section is not considered to teach against the having of high porosity with fine pores, but it is only considered to state that the addition of less than 5 parts by weight of the combustible material or more than 15 parts by weight is detrimental to forming a honeycomb structure with proper porosity or strength.

As for the arguments concerning the porosity taught by DeAngelis, since column 4 lines 10-20 states that the porosity may be either open or closed porosity resulting in a structure containing up to 60% and/or 0-20% porosity respectively. This is considered to teach that if a open porosity is used, then the porosity may range up to 60% which is considered to fall within the applicant's claimed ranges.

As for the lacking of the CTE and the MOR figures claimed by the applicant, since these figures are tied to the materials and the structural make-up of the honeycomb, then without any significant differences taught by the applicant in regard to the materials or the structural ranges, there is considered to be no difference in the physical qualities and no patentable weight is to be given. Please refer to *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

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As for the species and genus argument of the applicant, it is considered to be a mischaracterization of the intent of the MPEP § 2144.08. These claims and the claim rejections are not considered to fall under an obviousness test for species claim, they are considered to fall under claims with overlapping ranges and unexpected results MPEP 716.02(e). Since so many of these ranges overlap each other and without any teaching of unexpected results that would differentiate the claimed ranges from the cited range in the prior art, then no patentable weight is to be given.

As for the DeAngelis claimed ranges being overly broad, while this may be true, these ranges are taught and explained, therefore without an explicit showing of why the applicant's particular ranges are special or exhibiting unexpected results, the teaching of are considered to be valid prior art and applicable to the applicant's claims.

As for the MOR strength taught by the applicant, since the wall thickness, porosity and pore size, all fall within the ranges taught by DeAngelis, then the physical properties that go along with these ranges are considered to coincide with the claimed ranges. Applicant's claim language does not provide any other material or structural difference outside of the wall thickness, porosity and pore size to differentiate the claimed article from the article taught by DeAngelis. Therefore, no patentable difference can be read into the claims of the applicant.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB


JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
5/10/14